IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors:	Jens BACHMANN et al.	Art Unit 2617
Appln. No.:	10/579,063	Exr. N. Pilapitiya
Filed:	May 11, 2006	Conf. No. 8935
For:	CONTEXT TRANSFER IN A COMMUNICATION NETWORK COMPRISING PLURAL HETEROGENEOUS ACCESS NETWORKS	

RESPONSE UNDER 37 CFR 1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated April 2, 2009, Applicants respectfully request reconsideration and allowance of this application in light of the following remarks.

Claim 46 stands rejected, under 35 USC §102(b), as being anticipated by Wu et al. (US 2003/0048773). Claims 25-35, 37, 40, 43-45, and 49-53 stand rejected, under 35 USC §103(a), as being unpatentable over Wu in view of Lakshmi Narayanan et al. (US 2003/0103496). Claim 36 stands rejected, under 35 USC §103(a), as being unpatentable over Wu in view of Narayanan and Prehofer (US 2006/0099952). Claims 38 and 39 stand rejected, under 35 USC §103(a), as being unpatentable over Wu in view of Narayanan and Trossen et al. (US 2003/0204599). Claims 41 and 42 stand rejected, under 35 USC §103(a), as being unpatentable over Wu in view of Narayanan and Amirijoo (US 6,119,012). The Applicants respectfully traverse these rejections as follows.

Claim 46 defines a context transfer manager that generates a context for neighboring access networks and a mobile terminal and transmits the context to each of the neighboring access networks and the mobile terminal. The context is based on capabilities and parameters associated with the mobile terminal and access technology of the neighboring access networks.

The Office Action acknowledges that Wu does not disclose the above-noted subject matter (see Office Action section 6, lines 4 and 16-20, and page 5, lines 1-4). Thus, it necessarily follows that Wu cannot identically disclose the subject matter of claim 46.

Moreover, although a different section of the Office Action contradictorily proposes that Wu discloses the above-mentioned claimed subject matter in paragraphs [0060] and [0061] (see Office Action section 2, lines 11-18), the Applicants submit that, to the contrary, Wu discloses nothing similar to the above-mentioned subject matter in paragraphs [0060] and [0061]. Instead, Wu discloses the following in paragraphs [0060] and [0061]:

> *The main functional entity of the CCN is the Resource Manager, which coordinates the traffic distribution, and selects the WAN. It has a common database for managing users' profiles with entries like authentication, preferred access system, billing, policy, users' terminal capabilities, etc.*
>
> *The structure according to the present invention provides communication between mobile hosts and correspondent nodes residing in external networks. FIG. 2 shows a conceptual overview of the architecture. The universal component in this structure is a base station or access point (30) that serves as a wireless access point and interfaces with a CCN (31).*

As may be determined by inspection of Wu's paragraphs [0060] and [0061], Wu does not disclose the Applicants' claimed subject matter of generating a context, which is based on capabilities and parameters associated with a mobile terminal and access technology of neighboring access networks, for the neighboring access networks and the mobile terminal and

transmitting the context to each of the neighboring access networks and the mobile terminal. Thus, Wu does not identically disclose the subject matter of claim 46.

Accordingly, the Applicants submit that Wu does not anticipate claim 46. Therefore, allowance of claim 46 is deemed to be warranted.

Claim 25 defines a method for context transfer in which a context transfer manager that is common to a plurality of heterogeneous access networks: (1) determines neighboring access networks based on received location information and (2) transmits a context to each of the determined neighboring access networks and a mobile terminal. The claimed subject matter provides an advantage of reducing the number of trust entities and the amount of overhead traffic required to execute a context transfer (see specification page 5, second to last paragraph, through page 6, third paragraph). (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

The Office Action proposes that Narayanan discloses the Applicants' claimed subject matter of generating and transmitting a context to a mobile terminal and each of neighboring access networks that is determined to exist by a context transfer manager (see Office Action page 5, second and third paragraphs).

However, the previous Office Action, dated October 9, 2008, acknowledged that Narayanan does not disclose a context manager that determines neighboring access networks (see previous Office Action page 4, fourth paragraph). And the present Office Action does not propose that Narayanan discloses this subject matter; instead, the Office Action proposes that Wu discloses the subject matter (see section 6, lines 11-13).

Because Narayanan does not disclose a context transfer manager that determines neighboring access networks, as expressly acknowledged in the previous Office Action and tacitly acknowledged in the present Office Action, it necessarily follows, contrary to the present Office Action's proposal, that Narayanan cannot disclose the Applicants' claimed subject matter of transmitting a context to each such determined neighboring access networks. And Wu is not cited in the Office Action for supplementing the teachings of Narayanan in this regard.

Moreover, Narayanan does not disclose the Applicants' claimed subject matter of a context transfer manager that transmits a context to a mobile terminal. Instead, Narayanan discloses transferring context information among access routers (ARs) and policy servers (PSs) (see Narayanan paragraphs [0071]-[0081]). Wu is not cited in the Office Action for supplementing the teachings of Narayanan in this regard.

Furthermore, the Office Action fails to identify findings of fact that would motivate a skilled artisan to modify Wu's system to incorporate the teachings of Narayanan. Instead, the Office Action merely proposes that a motivation may be gleaned from Wu and Narayanan. Thus, the Office Action fails to establish a *prima facie* basis for combining the teachings of the applied references.

Accordingly, the Applicants submit that the teachings of Wu and Narayanan, considered individually or in combination, do not render obvious the subject matter now defined by claim 25. Independent claim 49 recites a mobile terminal that receives a context communicated by a context transfer manager and similarly distinguishes over the applied references for the reason identified above with respect to transmitting a context to a mobile terminal. Therefore, the

rejections applied to claims 36, 38, 39, 41, and 42 are deemed to be obviated, and allowance of claims 25 and 49 and all claims dependent therefrom is considered to be warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

To promote a better understanding of the patentable distinctions of the claimed subject matter over the applied references, the Applicants provide the following additional remarks.

Summary of Wu

Wu relates to a communication system that can seamlessly integrate and efficiently utilize various wireless communication systems (see Wu paragraph [0004]). In this connection, Wu utilizes a common core network that provides a common platform for a plurality of heterogeneous radio communication networks (see paragraph [0012]-[0014]). The major components of the common core network are a Mobility Manager supporting roaming of mobile hosts as well as a Resource Manager that coordinates traffic distribution through different wireless access networks (see paragraphs [0024]-[0028] and [0040]).

Wu's paragraphs [0041] through [0056] summarize several desirable design aspects for a heterogeneous network using a common core network. In this connection, paragraph [0044] suggests that mobility management should allow for seamless handovers among homogenous wireless access networks' respective technologies.

Wu's paragraphs [0049] and [0050] mention energy efficiency as an essential condition of system design and discuss optimizing services, such as maintaining location information and wireless system discovery as energy-efficient as possible.

Wu's paragraphs [0060] and [0061] define the functions of network entities of the common core network. The main functional entity thereof is the Resource Manager, which coordinates traffic distribution (i.e., is responsible for routing IP services) and selects wireless access networks. The Resource Manager maintains a common data base for managing users' profiles, with entries such as authentication, preferred access system, billing, policy, user's terminal capabilities, etc. Wu's subsequent paragraphs focus on routing and the coordination of the traffic distribution through the different wireless access networks. Paragraph [0071] et seq. focus on Quality of Service (QoS) management within the heterogeneous network.

Starting in paragraph [0099], Wu discloses, in reference to Fig. 3, a more detailed example of a heterogeneous network. In this connection, the components of a mobile host are summarized in paragraphs [0105] and [0106] as well as paragraphs [0123] to [0128]. A Network Selector (NS) of a mobile host communicates with a Resource Manager to tune a radio of the mobile host for a wireless access network to use. A Locator (LOC) of the mobile host provides the Resource Manager in the common core network with location information of the mobile host. A Local Resource Manager (LRM) deals with the local resources of the mobile terminal and interacts with the Resource Manager at the common core network.

As described in paragraph [0110], Wu's Resource Manager (RM) in the common core network is responsible for resource allocation and admission control to support the traffic distribution in the common core network. RM selects a wireless access network that can provide a requested service of a mobile host in the most efficient way. This way, the system combines multiple wireless access networks and exploits their specific strength to provide services in a spectrum-efficient way. Criteria of the Resource Manager for selecting the appropriate traffic

distribution are listed in paragraphs [0113] to [0118] and include user preferences, terminal capabilities, and the location of the mobile host.

A Mobility Manager (MM) deals with mobility related issues and traces the location of a mobile host to determine an access network effective on the mobile host at the particular location. The Resource Manager utilizes information from the Mobility Manager. Another major task of the Mobility Manager is to carry out local handoffs within the common core network and handoffs from external networks. For these handoffs, the Mobility Manager must communicate with the Resource Manager.

Wu's Disclosure Applied to the Claimed Invention

As may be determined from the above-presented summary of Wu's disclosure, Wu is not really related to the Applicants' claimed subject-matter.

For example, as to the novelty issue raised in item 2, page 2, of the Office Action, Wu may disclose a communication network comprising a plurality of heterogeneous access networks, wherein the mobile terminal is attached to one of the access networks. Wu may also disclose the reception of location information in paragraph [0107], where it is mentioned that a Locator (LOC) (55), shown in Fig. 3, provides location information to a Resource Manager (RM) (46). Thus, the Office Action seems to propose a correspondence between the claimed context transfer manager, recited in Applicants' independent claim 46, and Wu's Resource Manager (RM).

The Office Action further suggests that Wu discloses the presence of a processing unit to determine neighboring access networks for a mobile terminal based on the location information; more specifically, the Office Action proposes that Wu discloses this feature in paragraph [0061] and Fig. 2. However, Wu's paragraph [0061] and Fig. 2 do not expressly disclose a

determination of neighboring access networks for a mobile terminal based on location information.

Instead, Wu's Mobility Manager (MM) (47) traces the location of the mobile host to determine an access network effective on the mobile host at a particular location and carries out local handoffs with the common core network and handoffs of external networks (see Wu paragraphs [0120]-[0121]). In this connection, Wu only mentions that the Mobility Manager is communicating with the Resource Manager, which utilizes information from the Mobility Manager. However, from this passage it appears that the determination of the appropriate access network effective on the mobile host at a particular location is performed by the Mobility Manager and not by the Resource Manager (which seemingly corresponds to the context transfer manager according to the Office Action). In this interpretation, the functionality of the processing unit and the receiving unit would be performed in two different network entities and would, thus, not match the claim wording.

Next, the Office Action proposes that Wu discloses: (1) a context generation unit to generate at least one context for neighboring access networks and a mobile terminal and (2) a transmission unit to transmit the respective context to each of the neighboring access networks and the mobile terminal. In this connection, the Office Action again refers to paragraph [0061]. This paragraph is not related by any means to the two before-mentioned features. Rather, a skilled artisan would conclude from Wu's paragraph [0060] that the Resource Manager maintains a common database for managing users' profiles with entries like authentication, preferred access system, billing, policy, user's terminal capabilities, etc.. (see also paragraphs [0013] to [0108])

which may — if at all — be interpreted as to the Resource Manager maintaining context information.

However, as apparent from the summary above, Wu is not at all related to the transfer of any contexts nor their generation and is completely silent on this topic. Accordingly, neither Wu's paragraphs [0060] and [0061] nor any other of Wu's paragraphs, disclose the Applicants' claimed generation of at least one context for the neighboring access networks and the mobile terminal and the transmission of the generated contexts to the neighboring access networks and the mobile terminal.

Similarly, the above-mentioned portions of Wu's disclosure do not disclose the Applicants' claimed context generation unit that generates the context based on capabilities and parameters associated with a mobile terminal and capabilities and parameters taking into account respective access technologies of the neighboring access networks. Although there is a heterogeneous network provided in Wu, this does not imply that there is any information taken into account in context generation regarding the access technology of the neighboring access network, much less the generation of the context itself.

Similarly, as there is no context generated or transferred within the entire system of Wu, Wu's Resource Manager cannot reasonably be deemed a context transfer manager according to the Applicants' claimed invention. Therefore, Wu does not disclose a common context transfer manager, which is common to a plurality of heterogeneous networks in a communication network, that performs all context transfers related to a mobile terminal.

Wu may disclose the Applicants' claimed feature of receiving location information, but not any other feature of independent claim 46.

Moreover, the Office Action's remarks supporting the rejections of the independent claims seem to contradict those supporting the rejections of the dependent claims. For example, the Office Action acknowledges that Wu fails to disclose the Applicants' claimed subject matter of generating, with a context transfer manager, at least one context for neighboring access networks and a mobile terminal and transmitting the context to the mobile terminal (see Office Action section 6, lines 14-24). This clearly contradicts the Office Action's remarks with regard to claim 46.

Combined Teachings of Wu and Narayanan

As to independent claim 25, the Office Action proposes that the claimed generation and transmission of a context are disclosed by Narayanan, so that its teaching combined with the disclosure of Wu allegedly render the claimed invention obvious to the ordinarily skilled person in the art.

Applicants note that the Office Action's arguments appear to be self-contradictory. The Office Action acknowledges that Applicants' arguments submitted in the Amendment dated January 9, 2009, overcame the previously applied rejections (see Office Action item 10). As argued in the Amendment, Narayanan fails to disclose the Applicants' claimed subject matter of generating at least one context based on capabilities and parameters of neighboring access network, taking into account respective access technology (see Amendment page 16, last paragraph, though page 17). Applicants submit that the Office has acknowledged that Narayanan does not disclose this feature but now contradicts this acknowledgment (see Office Action page 5, paragraphs 2-4).

Applicants incorporate by reference the remarks presented in the Amendment for distinguishing the claimed subject matter from Narayanan's disclosure. More specifically, these remarks discuss why Narayanan does not disclose subject matter for which it is cited in the present Office Action. This subject matter includes generating a context for neighboring access networks and a mobile terminal and transmitting the context to each of the neighboring access networks and the mobile terminal. Similarly, Narayanan does not disclose the claimed subject matter whereby the context is based on the capabilities and parameters associated with the mobile terminal and the capabilities and parameters of the neighboring access networks, taking into account the respective access technologies.

Furthermore, the teaching of Narayanan should not be applied to the teaching of Wu. As outlined above, Wu does not relate to a context transfer and does also not refer to the generation of any context. There also appears to be no concept of using a common context transfer manager in Wu. Therefore, it is questionable why and for what reasons Narayanan would be applied to Wu; and if one would apply the teaching of Narayanan to Wu, what would have suggested the use of a common context transfer manager?

Accordingly, in light of the foregoing, it is submitted that all pending claims are directed to allowable subject matter, and a notice of allowance is respectfully requested.

If any issues remain which may best be resolved through a telephone communication, the examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

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JEL/DWW/att

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